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uneven spreading of laundry is detected during rotation of a washing tub for squeezing after metal ions are added.

In order to achieve the above object, according to the present invention, a washer, wherein antimicrobial metal ions can be added into water and attached to a surface of laundry in a predetermined process in a laundry washing session, is so configured that a time of the predetermined process is longer when metal ions are added than when no metal ions are added. It requires certain amount of time for the metal ions to fully attach to laundry. With this configuration, when the metal ions are added, the processing time is extended compared with the case where no metal ions are added, leading to satisfactory attachment of metal ions to laundry and exertion of their expected antimicrobial effect.

According to the present invention, in the washer configured as described above, the antimicrobial metal ions can be added into water being fed during "rinsing with pouring water." In case where rinsing is performed while pouring water, there is a possibility that a concentration of the metal ions which have been added decrease. With this configuration, during the "rinsing with pouring water," a concentration of the metal ions in water does not decrease, and necessary amount of the metal ions is attached to laundry.

According to the present invention, a washer, wherein antimicrobial metal ions can be added into water and attached to a surface of laundry in a predetermined process in a laundry washing session, is so configured that the predetermined process includes a powerful swirl period and a mild swirl period or a powerful swirl period and a still period. It is not always necessary to agitate water strongly in order to make the metal ions attached to laundry. With this configuration, aside from the powerful swirl period, the purpose of which is to make metal ions be dispersed uniformly into water and spread to every corner of laundry, there is a mild swirl period or a still period, the purpose of which is to quietly wait for attachment of

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metal ions to laundry, it is possible to avoid damages to the laundry cloth or increase in electricity consumption. Additionally, generation of a mild swirl, rather than a still state, makes users notice that the washer is in operation, not malfunction.

According to the present invention, in the washer configured as described above, a
5 ratio of powerful swirl period and mild swirl period or a ratio of powerful swirl period and still period is constant, regardless of a volume of water in a washing tub and/or an amount of laundry. With this configuration, programming of control program is easy.

According to the present invention, in the washer configured as described above, a
ratio of powerful swirl period and mild swirl period or a ratio of powerful swirl period and
10 still period varies in accordance with a volume of water in a washing tub and/or an amount of laundry. With this configuration, it is possible to set the ratio of powerful swirl period and mild swirl period or the ratio of powerful swirl period and still period appropriately in accordance with the volume of water or the amount of laundry, thereby damage to laundry cloth is alleviated and unnecessary electricity consumption is avoided.

15 According to the present invention, in the washer configured as described above, the water into which the metal ions have been added is agitated by mild swirl or placed at a standstill after said water is agitated by powerful swirl for a predetermined period. With this configuration, by thoroughly agitating the water by the powerful swirl, the metal ions can be mixed uniformly in the water and spread to every corner of the laundry.
20 Subsequently, by agitating the water by the mild swirl or placing the water at a standstill, the metal ions are attached to the surface of the laundry, and the motor load is reduced, thereby damage to laundry cloth is alleviated and unnecessary electricity consumption is avoided.

According to the present invention, in the washer configured as described above, the

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predetermined process is a final rinsing process. With this configuration, an expected sterilizing effect can be exerted.

According to the present invention, a washer, wherein antimicrobial metal ions can be added into water in a predetermined process in a laundry washing session, is so configured
5 that when uneven spreading of laundry is detected during squeezing rotation of a washing tub after addition of metal ions, a countermeasure to be adapted is different from that when such uneven spreading of laundry is detected while no metal ions are added. With this configuration, when uneven spreading of laundry is detected while rotating for squeezing after the metal ions are added, it is possible to correct uneven spreading of laundry, taking the
10 antimicrobial effect of the metal ions into consideration.

According to the present invention, in the washer configured as described above, the different countermeasure is rinsing for correcting uneven spreading of laundry by agitating it in water containing metal ions. With this configuration, in case where the rinsing for

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CLAIMS

1. (Amended) A washer wherein antimicrobial metal ions can be added in to
water and attached to a surface of laundry in a predetermined process in a laundry washing
5 session,

wherein a time of the predetermined process is longer when metal ions are added
than when no metal ions are added.

2. The washer according to claim 1,
10 wherein metal ions can be added into water being fed during “rinsing with pouring
water.”

3. (Amended) A washer wherein antimicrobial metal ions can be added in to
water and attached to a surface of laundry in a predetermined process in a laundry washing
15 session,

wherein the predetermined process includes a powerful swirl period and a mild
swirl period or a powerful swirl period and a still period.

4. The washer according to claim 3,
20 wherein a ratio of powerful swirl period and mild swirl period or a ratio of
powerful swirl period and still period is constant, regardless of a volume of water in a
washing tub and/or an amount of laundry.

5. The washer according to claim 3,

wherein a ratio of powerful swirl period and mild swirl period or a ratio of powerful swirl period and still period varies in accordance with a volume of water in a washing tub and/or an amount of laundry.

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6. (Amended) The washer according to claim 3,

wherein the water into which the metal ions have been added is agitated by mild swirl or placed at a standstill after said water is agitated by powerful swirl for a predetermined period.

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7. (Amended) The washer according to claim 6,

wherein the predetermined process is a final rinsing process.

8. (Amended) A washer wherein antimicrobial metal ions can be added in to

15 water in a predetermined process in a laundry washing session.

wherein when uneven spreading of laundry is detected during squeezing rotation of a washing tub after addition of metal ions, a countermeasure to be adapted is different from that when uneven spreading of laundry is detected while no metal ions are added.

20 9. (Amended) The washer according to claim 8,

wherein the different countermeasure is rinsing for correcting uneven spreading of laundry by agitating it in water containing metal ions.

10. (Amended) The washer according to claim 9,

wherein in case where the rinsing for correcting uneven spreading of laundry is executed with fresh water being replenished, an amount of metal ions to be added is less than that added in previous processes.

5 11. (Amended) The washer according to claim 8,
wherein the different countermeasure is rinsing for correcting uneven spreading of laundry by agitating it in rinsing water with pouring water containing no metal ions with indication and/or notification that water being fed contains no metal ions.

10 12. (Amended) The washer according to claim 8,
wherein the different countermeasure is termination of squeezing rotation together with indication and/or notification that uneven spreading of laundry is detected.

13. (Amended) The washer according to claim 8,
15 wherein when detection of unbalance in laundry is not a single occasion, different countermeasures are adapted for each occasion.

14. (Amended) The washer according to claim 8,
wherein a plurality of kinds of countermeasures for unbalance are provided, and
20 kinds and/or order of countermeasures to be adapted are selectable.

15. (Amended) The washer according to claim 13,
wherein a plurality of kinds of countermeasures for unbalance are provided, and

the kinds and/or order of countermeasures to be adapted are selectable.

16. (Added) The washer according to one of claims 1 through 15,

wherein metal ions are generated by using an ion elution unit that elutes metal ions

5 by applying a voltage between electrodes.